South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Office of the Executive Officer
Barry R. Wallerstein, D.Env.
909.396.2100, fax 909.396.3340

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California Energy Commission
Dockets Unit
Attn: Docket No. 04 IEP 1K
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

The South Coast Air Quality Management District (AQMD) staff appreciates this opportunity to comment on the latest version of the draft CEC's Integrated Energy Policy Report (IEPR) released in September, 2005. The comments are specific to Chapter 2 of the report and focus on natural gas vehicles, natural gas fuel quality, the role of liquefied natural gas, biodiesel, advanced diesel technology, plug-in hybrids and ethanol.

In general, the AQMD staff commends the CEC and its staff for considering the full range of issues of central importance to California's petroleum-fuel-based dependency. We appreciate the strong role the CEC contemplates for alternative fuels in general. The following specific comments are intended to strengthen the IEPR as it moves forward in the policy formation process.

Natural Gas Vehicles

The IEPR includes extremely conservative assumptions regarding the role of natural gas for light duty vehicles. Home refueling incentives similar to the ones for Honda could be employed in the EIPR's "Honda + GM" case scenario. We suggest that the analysis be updated to reflect equivalent incentives in this scenario. In addition, qualified volume manufacturers and other "upfitters" such as Baytech and BAF Technologies are continuing to provide some leverage and momentum to market expansion for both light-duty and medium-duty natural gas vehicle markets. Heavy-duty vehicle markets are also being significantly supported by two major engine manufacturers, Cummins Westport and John Deere Power Systems. Collectively, these efforts indicate that there continues to be expanding opportunities for natural gas vehicle commercialization in the state.

This analysis should also reflect the latest natural gas vehicle and infrastructure incentives provided by the federal energy bill recently signed by President Bush. These incentives should be explicitly assessed, as they improve the economics of CNG and LNG relative to diesel; It is equally important to emphasize the historic repositioning of diesel prices relative to gasoline and natural gas prices. Diesel prices are rising much faster than gasoline and contract CNG prices, and thus the CNG economic impacts are negatively skewed in the

current version of the IEPR. Currently, retail diesel prices reached yet another record level. We strongly recommend that the analysis performed by TIAX on the future prospect for natural gas vehicle market penetration be discussed further and utilized as a basis for state policy in this arena.

There are significant synergies between CNG and LNG. The AQMD has sponsored a growing number of L/CNG stations which are capable of providing both forms of natural gas to vehicles. New LNG import terminal infrastructure under consideration would provide a natural market anchor for significant LNG use in transportation sources, especially port-related activities which are in dire need of emission reductions.

Natural Gas Fuel Quality

Natural gas fuel quality is of critical importance in maintaining and building upon the emission reductions which have been achieved by vehicles operating on compressed natural gas. There is a clear need to ensure that the current high quality of California's natural gas is retained. The following summarizes our views as recently expressed to the California Air Resources Board on this issue:

- The proposed CNG specifications are not consistent with the engine manufacturers' specifications, and there is no indication that they approve the proposed specifications or will honor warranties for fuels not meeting their specifications.

- In order to assure that the vehicles can comply with CNG of varying gas quality, the vehicles should be emission tested with two different certification fuels representing the opposite extremes of CNG that may be encountered. The existing fleet of natural gas vehicles which are most sensitive to natural gas fuel quality should be held harmless as the state considers revisions to its natural gas fuel specification.

- By establishing a two tier specification, with different specifications in different geographical locations, it will be more difficult to establish a statewide CNG fuel corridor with consistent fuel specifications. This will discourage intrastate travel by natural gas vehicles.

LNG

The AQMD staff believes that significant emphasis should be given to the role of LNG in helping diversify California's transportation fuel segment. As noted above, there is a powerful nexus between adding large-scale LNG importing facilities and the potential to utilize a portion of such fuel for transportation, especially by vehicles operating in and serving the port regions. The AQMD staff also has concerns about LNG specifications which should be considered holistically by the CEC as it attempts to integrate state energy policy in this area. Specifically, we would refer the CEC staff to the AQMD staff's

comments to the PUC of September 23, 2005 (docket R.04-01-025). The following summarizes our key concerns related to LNG:

> New supplies of LNG at 1400 Wobbe Index are expected to cause significant NOx increases and even violations of AQMD NOx rules for some equipment operating in SCAQMD, compared to the current system average Wobbe Index of 1332 Btu/scf.
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> SCAQMD recommends that expedited research is needed in the following areas:
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> - Emission studies of the impacts of higher BTU content gas on combustion equipment, particularly larger combustion and power generation sources for which little data presently exists.
> - Effects of inert gas addition on large and small equipment.
> - Analysis of the regional air quality impacts from high-Btu LNG importation.
> - Cost analyses of different mitigation measures, including gas treatment and end use equipment modifications.

Biodiesel

Biodiesel composition is important in determining the potential impact of its use on exhaust emissions. The AQMD staff believes that there is a need to better identify the composition and source of biodiesel, such as soy vs non-soy feedstocks. It is more appropriate to concentrate initial high volume use in agricultural sources. Initial efforts should be focused on blends of 20% or less, while additional NOx emissions data is obtained. We strongly urge that the state stipulate that NOx emissions not be degraded, and that any emissions mitigation efforts be carried out concurrent to the use of biodiesel, and matched as closely as possible to the areas of its intended use.

Advanced Diesel Technology

On page 14 of the draft IEPR, the staff refer to the availability of 0.2 grams NOx per brakehorsepower-hour diesel engines in the year 2007, and project that a 90% level of control will be achieved by that date. However, there will be essentially no such 0.2 gram NOx engines by 2007, and thus, there will not be any offsetting reductions to mitigate biodiesel NOx emissions. The final EIPR should delete reference to such "offsetting" scenarios.

Plug-in Hybrids

Major auto manufacturers should be strongly encouraged by the state to develop plug-in hybrid vehicle technology. Such technology should be a much more prominent policy thrust for the CEC and the state as a whole.

Ethanol

As noted by General Motors in their testimony at the CEC's September 29, 2005 workshop, permeation emissions associated with low level blends are a serious problem which should give the CEC fundamental pause in recommending any increase in low-level blend use for ethanol above current levels. The AQMD staff believes that it is crucial that the existing unmitigated emissions associated with current ethanol use be addressed before any consideration is given to introducing up to 10% blends of ethanol in gasoline. The AQMD staff agrees with General Motors that the most sensible approach to addressing the Renewable Fuel Standard mandates of HR6 is to focus on E-85 rather than low level ethanol blends. Automobile and engine manufacturers should be pushed to develop the cleanest possible FFV technology, such as P-ZEV certification, since this has already been done on gasoline. More E-85 in-use emissions data is needed to ensure that there are no unintended consequences from a large increase in FFV commercialization.

The AQMD staff greatly appreciates the invitation extended to the SCAQMD by Commissioner Geesman at the September 29, 2005 workshop to work more directly and in concert with the CEC as it moves to finalize the IEPR policy recommendations. We are most willing to redouble our efforts at sharing our experience with the CEC and participating in your process to develop important state initiatives to diversify our transportation fuel mix. The AQMD staff is committed to working very cooperatively and in a spirit of partnership in this regard.

If you have any specific questions regarding these comments, please feel free to contact Dr. Chung Liu, Deputy Executive Officer, Science and Technology Advancement at 909-396-2105, or Mr. Paul Wuebben at 909-396-3247.

Sincerely,

Barry R. Wallerstein, D.Env.
Executive Officer

CSL:HH:PW

cc: John L. Geesman, CEC Commissioner

James D. Boyd, CEC Commissioner